

## Abstract

The present invention discloses leak detectors for mixed heat exchangers. In mixed heat exchangers it is important to monitor leaks from the liquid flows to the gas flows since liquid can damage delicate machinery. The present invention comprises a barrier mounted on the gas side of the heat exchanger. The barrier contains at least two thermometers, at least one of which is substantially exposed to the gas flow and at least one of which is substantially isolated from the gas flow. When cooler water droplets and vapor enter the gas flow they will come into contact with the thermometer that is in substantial contact with the gas flow, lowering the measured temperature dramatically. The isolated thermometer will not have its measured temperature quickly lowered by leak. Therefore a different in the measurement in the change in temperature of the exposed thermometer versus the isolated thermometer will indicate a leak in the heat exchanger.